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VETERINARY JOURNAL

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FEBRUARY, 1921.

MAJOR-GENERAL SIR LAYTON JOHN BLENKINSOP, K.C.B., D.S.O., F.R.G.S.

THE Veterinary profession, and especially the Royal Army Veterinary Corps, will heartily congratulate Major-General Sir Layton J. Blenkinsop on the honour of Knighthood conferred in the New Year's Honours List. Born in 1862, the third son of Lieut.-Colonel Blenkinsop, our distinguished colleague graduated from the Veterinary College (where he gained the Coleman Medal) in 1883, and at once entered the Army, being sent to India the same year. Remaining there until 1893, Lieut. Blenkinsop occupied many important positions, including those of Veterinary Advisor to the Punjab Government and Professor of the Lahore Veterinary College. In 1898, being then in Egypt, he was appointed Senior Veterinary Officer to the Soudan Expeditionary Force, being present at the battle of Khartoum. For his services he was awarded the D.S.O., being mentioned in despatches and receiving the Egyptian Medal and the English Medal.

On the outbreak of the South African War of 1899-1902, as a Captain and Senior Veterinary Officer of the Cavalry Division, and eventually of Remounts, he was present at the relief of Kimberley, the battles at Paardeburg, Dreifontein, Diamond Hill and many others in Cape Colony, Orange Free State and Cape Colony.

For these services he received the Queen's Medal with six clasps, and the King's Medal with two clasps, being again mentioned in despatches and being promoted to the rank of Major.

Returning to England, Major Blenkinsop was made Principal Veterinary Officer of the Irish Command from 1904 to 1906, being then again sent to South Africa, this time as P.V.O., a position he occupied until 1909. Called back to England, he occupied several high commands until 1914, when he was sent to India as Inspecting Veterinary Officer with the rank of Colonel until, in July, 1916, he was selected to fill the post of Director of Veterinary Services. A further honour awaited him in December, 1917, when, as Brigadier-General, there fell to his lot the well-deserved promotion to the highest position of all, that of Director-General of the Royal Army Veterinary Service at the War Office in London.

For services rendered during the Great War of 1914-1919, a Major-General's rank was accorded, together with a C.B., and a further mention in despatches.

Major-General Blenkinsop's military career has been a brilliant one, but in other branches of the profession his services have always been to the fore and given ungrudgingly. On educational matters his views have always been progressive, both as regards the student and the practitioner, and he has contributed numerous articles to the Veterinary Press. At the present moment as an energetic member of the Council, he has shown himself to be a man of strong convictions, and that he is popular with his professional *confrères* there is evidence in the fact that he was recently unanimously elected President of the Central Veterinary Medical Society.

May he have long life to enjoy, with Lady Blenkinsop (whose name is already well known for good work done in connection with the R.A.V.C. Comforts and Benevolent Fund), the well-deserved honours which have fallen to his lot.

Editorials.

IMPROVEMENT NEEDED FOR THE TRANSPORT OF MEAT IN THE CITY OF LONDON.

In a further column we give an abstract from the joint report of the Veterinary Inspector and the Medical Officer of the City of London, in which the question of the transport and handling of meat intended for human food is dealt with in phrases which show that there is very great room for improvement. In fact, it is with surprise that we read how carelessly and even filthily this is carried out. To think that in 1920 the Medical Officer of Health of the largest and richest

city of the world should have to complain that meat intended for the food of the citizens of London is "deposited on the footway," on the pavement of which "there is considerable fouling of the surface by blood and particles of fat, etc., which are trodden into a hard layer mixed with street refuse," and that "the sectioning of meat results in large areas of muscular tissues being exposed, and, as the cut surface is moist, dust (fouled by the large numbers of horses which stand about) settles upon it, and the further risk of contamination by animals is obvious."

Carts are only washed occasionally, and straw, without cloths, is not a suitable thing on which to place meat intended for human consumption.

On one occasion a dog was seen in a cart in which uncovered joints of meat were lying, and frequently men whose boots were soiled with road dirt got into the carts and trod over the place where the meat was afterwards deposited. On several occasions they even trod on the meat itself. The want of cleanliness on the part of the porters who carried the meat both in regard to their overalls and their caps is especially alluded to.

The subject is dealt with in detail in the report, and it shows a state of affairs which is very unsatisfactory, and which should be remedied without delay; for of what use is it to provide an efficient and clean meat inspection service inside the meat market when the goods are open to filthy contamination by being dumped down on a dirty pavement, carried on dirty shoulders and in dirty carts, and then taken, uncovered or improperly covered, to the retail shops for sale to a deluded public, who imagine that they are purchasing a pure and clean article. It is only on account of the English habit of cooking our food well that we escape scores of diseases of which our meat would be the carrying agent.

EXTINCTION OF THE PHYSIOLOGICAL RESEARCH LABORATORY OF THE UNIVERSITY OF LONDON.

Most practising members of the profession have at one time or another been attracted by some particular problem in animal pathology or physiology to which their clinical observation has given an answer that only needs experimental confirmation. It may have been a comparative simple matter that could have been solved by a few hours' work, but the difficulty of finding a laboratory in which to conduct their experiments has been insurmountable, and the problem and its nascent answer have been reluctantly abandoned. The schools

and colleges of London possess laboratories which are primarily designed for the instruction of students, such resources as they may have for research work are necessarily subordinated to the needs of teaching, and their staff have little time or accommodation to offer to the post-graduate worker. It was with the object of providing an institution which should be free to all competent workers who had a problem to investigate that, some seventeen years ago, Professor Waller founded the Physiological Laboratory of the University of London. The laboratory was equipped by the aid of a generous donation from the members of Mrs. Waller's family, and some rooms assigned to it in the building of the University. Professor Waller gave his services, and was assisted by a competent staff. Any genuine worker was welcomed, the resources of the laboratory were unreservedly placed at his disposal, and such aid and advice as he might require was tendered by the director and his staff.* No fees were demanded, and the worker was free to come and go in such intervals as he could spare from his professional duties. It would be difficult to imagine a more valuable institution more economically carried on, and the total expense was only £1,300 a year, of which £800 was contributed by the University of London, and £500 by the London County Council. But £800 represents an amount which can be utilised towards the salary of one of the higher officials of the enormous clerical staff that the University supports, and it is proposed to devote the rooms now used as laboratories for the storing of office files of the dreary documents that the bureaucratic machinery of the University accumulates; even before the war the University expenses in printing them were £2,000 a year. The burden of bureaucracy is not confined to Whitehall, and therefore the laboratory has to go. Some three years ago the beautifully equipped lecture room was converted into an office for women clerks and covetous eyes were cast on the remaining accommodation. The £500 a year grant of the London County Council was an obstacle to the extinction of the laboratory, but the Council were asked (and consented) to transfer their grant to the general fund of the University, which thus became the sole paymaster of the Laboratory. Now the Senate have decided to withdraw all financial support from the laboratory and require its removal from precincts henceforward to be

* Much valuable help in the discovery of a safe method of chloroforming dogs for operations and painless destruction has been acknowledged by the Author of "Anasthesia and Narcosis of Animals and Birds" to Professor Waller and Dr. Symes; to the former of whom this book (which is the only British text book on the subject) is dedicated.

handed over to the typewriter and the office file. For those who, without pay or encouragement, have given their time to research work, and who had this splendid laboratory to work in, it is a heavy blow. The real significance of this calamity is, however, far greater—it means the death of a great idea which might have been prolific of much. The medical or veterinary post-graduate who has paid his fees and passed his examinations has still a claim on the University. He has the right to turn to it and ask for opportunities to enlarge his knowledge and that of his profession, not only by reading books or listening to lectures, but by his own personal work. How does the University intend to meet this demand? It proposes to spend some millions on a superb block of new offices in Bloomsbury, and it closes the only University laboratory in London devoted solely to private physiological and pathological research.

A FURTHER APPRECIATION OF THE ROYAL ARMY VETERINARY CORPS.

In a further column we publish an extract from the Despatch of the General in Command of the British Army of the Black Sea, in which the work of the Royal Army Veterinary Corps is alluded to and gracefully acknowledged with the name of the Chief Veterinary Officer.

It is of particular interest just now, as it is particularly in connection with work done under the Remount Services, and proves again the impossibility of the latter service to work effectually and efficiently without the help of proper veterinary supervision.

The Veterinary Service could adequately carry out *all* the Remount Duties and thus save the country and the taxpayer much expenditure by preventing duplication of officers, but the Remount Service could not keep its animals in health and fit for duty without skilled veterinary advice.

Why, then, should not the whole question of purchase and selection of horses and their maintenance in health and disease be handed over to the Veterinary Service? It is time this was given serious consideration.

The following is an extract from the Despatch by General Sir G. F. Milne, G.C.M.G., K.C.B., D.S.O., Commander-in-Chief, the Army of the Black Sea, published as the Fourth Supplement to the *London Gazette* of Tuesday, January 4, 1921:—

General Headquarters, Army of the Black Sea,
Constantinople. August 11, 1920.

Sir,—I have the honour to forward for your information the following account of the action taken by me and by the troops under

my command from the date of the signature of the Armistice with Turkey to the date of the signature of the Turkish Peace Treaty (August 10, 1920).

"All surplus animals have been disposed of under arrangements made by my Director of Remounts, Brigadier-General G. W. Dowell, C.M.G., C.B.E. Approximately 5,000 horses and 17,000 mules brought in prices which averaged £50 and £42 respectively. The fact that such prices were obtained was largely due to the splendid condition of the animals, thanks to the conscientious work of the Royal Army Veterinary Corps, under Lieut.-Colonel W. A. Jelbart."

AN AMERICAN TRIBUTE TO THE ROYAL ARMY VETERINARY CORPS.

THE *Boston Evening Transcript* has recently devoted a whole page to the subject of "Our Animal Allies in the Great War, Horses and Mules," and in the fourth lecture, given by Mr. E. H. Baynes, at the request of President Lowell, of Harvard University, this clever and deservedly popular lecturer generously praises the good work done during the late war by the British Veterinary Corps. The lecture was illustrated by over 120 lantern slides, and drew a large and sympathetic audience. Mr. Baynes gave realistic descriptions of the conditions under which the animals lived and worked at the Front, and then went on to describe what was done for them when sick and incapacitated. Photographs of life in a British Veterinary Hospital, of operations under chloroform, of sick patients, and convalescents ready to be returned to the Field again, and the general working of the Veterinary Service, were thrown on the screen in such a way that the audience could almost imagine themselves on the actual spot, and due tribute was paid to the work done in regard to its value, both from the humane and the pecuniary aspect.

At the beginning of the world war the British Veterinary Service was practically perfected, and all it required as the war developed was expansion. The English remount and veterinary services were declared the best in the world, and especial emphasis was drawn to the fact that all horsed units had a veterinary sergeant, under the direct orders and supervision of a veterinary officer, attached for first aid work before despatching to the mobile section and, finally, the hospital. To quote the actual heading under which these two latter paragraphs appeared, the Editor of the paper has it in large type that the "English Service led the World."

Mr. Lowell remarked upon the great losses which occurred in the animals of the American Army at the commencement, and, indeed, until the Veterinary Service was remodelled on British lines, especially drawing attention to the stupid system which previously existed of having

a veterinary hospital in connection with a remount camp. Contagious and other diseases could not help but spread to the healthy horses and mules under such conditions, and tens of thousands of dollars were wasted whilst this system existed. It was just another instance of the folly of permitting lay authority to control in matters of professional import, and this late war has demonstrated more than any other that the old adage of " Every man to his own trade " is a true one, and the only one by which victory could possibly have been attained.

General Articles.

MEAT INSPECTION IN THE CITY OF LONDON.

ABSTRACT FROM REPORT.

BY LIEUT.-COL. T. D. YOUNG, O.B.E., M.R.C.V.S., D.V.S.M. (LOND.),
Veterinary Inspector and Chief Meat Inspector for the City of London.

PREFACED BY SOME REMARKS ON "MEAT HANDLING,"

BY DR. HOWARTH, C.B.E., D.P.H., M O.H. CITY OF LONDON.

Handling of Meat.—It often happens that the supply arrives at the carts more quickly than it can be packed, and, as a consequence, it is allowed to stand about on the trucks for a longer time than is desirable. During this waiting period the meat is sometimes deposited on the footway. It should be noted that the sectioning of meat results in large areas of muscular tissues being exposed, and as the cut surface is moist, dust readily settles on it with the resulting disadvantages which are common to dust deposition ; dust is excessive in dry weather, as the streets in the loading-up areas are fouled by the large number of horses which stand about. As regards the pavement, I need only mention that there is considerable fouling of the surface by blood and particles of fat, etc., which are trodden into a hard layer mixed with street refuse. The further risk of contamination by animals is obvious.

I have had occasion officially to complain of one more than usually gross instance of piling meat on the ground. In this case the meat was separated from the wet ground by a layer of coarse sacking, the edge of the cover being also practically flush with the sides of the pile. The surroundings were foul.

As regards the carts, the general practice is to cover the bottom of the cart with straw. In other cases a kind of sacking is used with or without an under layer of straw, and in exceptional cases white calico or some similar matter is used. Some of the carts do not come to the market in a thoroughly clean condition. They are certainly washed at times, but not every day. The straw may be clean, but it is not a suitable material on which to place the cut sections of meat. The cloths I have seen used day after day, being washed, in some cases, not oftener than once a week. Blood-stained

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cloths should be washed before being used again. White cloths are more desirable, as staining and dirt readily show and this results in greater care being displayed.

The procedure during packing is open to criticism. I have often seen, even on wet days, men, whose boots were soiled with road dirt, get into the cart to fill the front part. In doing so they soil the straw or cloth at the rear and on this soiled part meat is afterwards laid. If a white cover were used this would probably be rolled up at the back, whilst the front was being packed, and it would be straightened out as the packing progressed.

I have seen a dog in a cart in which uncovered joints of meat were lying, and the dog would have been driven away in the cart if I had not objected. My protest in this and other cases was received badly. This is simply mentioned as an instance of disregard of an obvious precautionary essential.

I have seen men stretching over uncovered meat to reach the front of the cart, and in exceptional cases have seen them with their feet on it. I have also noticed at times meat soiled with roadway dirt.

As regards the transfer of meat from the stalls to the cart, I take exception to the infrequency of change of overalls by the porters, and to meat being carried on a man's head when he is wearing a cap which has done duty for weeks without being washed.

Meat is not allowed to be placed on the floor of the stalls inside the market, and practically every trader has slightly raised wooden benches. There are no such facilities outside the market, nor are there any powers to require them to be provided.

It seems strange that whilst in the slaughterhouses due regard *must* be paid to the observance of cleanliness, and in the markets the traders recognise the advantage of cleanliness and order, and further, that butchers at their shops encourage brightness and cleanliness, as is evidenced by good lighting, clean benches, bright brass and steel fittings, and clean-looking tiles to line the shop, so little regard should be paid to the elementary rules of cleanliness in the interval which elapses between purchase from the wholesale dealer and the reception of the meat at the shop.

I beg to repeat the recommendations which I have previously made:

1. Carts and vans used for the removal of meat should be thoroughly cleansed after use.
2. When used for the removal of meat, the floor of the vehicle should be covered with some suitable washable material, preferably white or grey in colour. Straw is an unsuitable material to use unless covered with some suitable fabric.
3. A clean cloth should be used to protect the meat from coming into contact with the sides of the cart, and also to cover the top of the consignment.

4. The surface of the meat should not come into contact with any tarpaulin, and tarpaulins should be kept in as cleanly a state as possible.
5. No driver should be allowed to sit on a consignment of meat even if the meat is adequately covered.
6. The various joints of meat should, as far as may be practicable, be covered on the cut section with grease-proof paper.
7. It would be an advantage if sides of beef were covered with a layer of some material similar to that used for imported meat. This would avoid soiling by the clothing of porters, who cannot prevent their overalls being fouled in the course of a morning's work.
8. In the transfer of meat from the stalls to the vans, meat should not be allowed to rest on the uncovered head of the porter, nor on the cap which he regularly wears. A washable head-cover should be used by those men who have to carry such large amounts that the meat must touch the uncovered head.
9. Meat should not be placed on the ground whilst waiting to be packed in the cart, even though a covering has been first put down to receive it.
10. Wet offal should not be placed in contact with quarters, sides, or other portions of meat without adequate protection against soiling by the moisture exuding from the offal.

I am informed that the whole question of the transport and handling of meat is under the consideration of the Ministry of Health.

The supplies deposited for sale within the Central Markets, Smithfield, for the year ending December 31, 1919, as shown by the Annual Report of the Market Superintendent, were as follows :—

Source of Supply.	Tons of Beef and Veal.		Tons of Mutton & Lamb.	
	1918	1919	1918	1919
United Kingdom ...	49,456	66,260	24,590	23,186
Australia and S. Africa ...	4,656	11,724	16,622	47,166
South America	23,953	68,362	8,493	16,364
North America	50,145	28,265	38	69
Other Countries ...	10	343	1	...
TOTALS	128,220	174,954	49,744	86,785
1913	...	231,811	...	138,614

Source of Supply.	Tons of Pork & Bacon.		Tons of Poultry, Game, &c.		Tons. Totals.	
	1918	1919	1918	1919	1918	1919
United Kingdom ...	2,648	1,902	13,838	15,431	90,532	106,779
Australia and S. Africa...	6	16	5,351	4,343	26,635	63,249
South America	147	1,195	274	138	32,867	86,059
North America	6,786	4,752	2,807	4,350	59,779	37,436
Other Countries ...	15	11	1,25	1,169	1,277	1,523
TOTALS	9,605	7,876	23,521	25,431	211,090	295,046
1913	...	35,634	...	26,052	...	432,111

General Remarks.—The quality of the imported meat passing through the Market has been " very fair," but " condition " has caused a considerable amount of extra work to the inspectors. Those remarks apply chiefly to mutton. Under " Control," only arranged quantities of each class of food were marketed daily. This resulted in quantities of mutton, which in normal times would have been marketed with all its bloom, arriving in the market cold stores, etc., in a mouldy and decomposing condition, necessitating careful examination, much

"trimming," and also increased condemnation. The practice of cutting carcases of mutton into two portions and enclosing the one within the other, has added to the amount of meat condemned; no doubt in time this practice will cease, to the benefit of the consignors. Bacon also gave the inspectors extra work, and large quantities of this food were found unfit for human consumption, while much of it, passed as fit for food, was far from being satisfactory.

The meat derived from the United Kingdom was not generally of so high a quality as in pre-war years. This was due to a number of causes, but chiefly to the fact that animals were graded and sold at a fixed rate according to grade, and as feeding stuffs were costly there was no inducement to farmers to produce exceptionally high quality cattle.

The foregoing conditions are the aftermath of the war, and as more normal conditions return, we may expect better "quality," better "condition," and more food supplies at the markets.

TUBERCULOUS MEAT SEIZED AT THE CENTRAL MARKETS DURING THE YEAR 1919.

	BEEF.			PORK.			VEAL.		
	Cars.	Qrtrs.	Pces.	Cars.	Qrtrs.	Pces.	Cars.	Qrtrs.	Pces.
1919	133	783	114	99	...	13	13	...	2
1914	12	79	91	431	19	61	3	...	2
	—	—	—	—	—	—	—	—	—
Increase	121	704	23	...	...	...	10	...	...
Decrease	...	...	...	332	19	48	...	...	...

OFFAL.

	Heads.	Tongues.	Lungs.	Hearts.	Livers.	Stomachs.	Spleens.	Mesenteries.	Intestines.	Kidneys.	
1919	260	212	123	...	121	11	31	9	9	51	Oxen
1919	190	...	141	...	73	...	6	...	...	...	Pigs
1919	4	...	11	...	7	...	2	...	...	4	Calves
1914	37	53	17	2	12	1	3	1	1	2	Oxen
1914	1,785	...	153	...	160	...	...	37	...	9	Pigs
1914	...	...	1	...	1	...	...	...	...	...	Calves

Total weight for 1919 = 56 Tons, 11 Cwts., 2 Qrs., 14 lbs.
" " 1914 = 50 " 2 " 2 " 7 "
Increase = 6 " 9 " 0 " 7 "

Of 928 bovines (not including calves) killed at the Aldgate slaughter houses, 24 or 2.4 per cent. were found affected with tuberculosis, and of the 10,644 calves, 39 or 0.3 per cent. showed lesions of the same disease.

SUMMARY OF UNSOUND FOOD DESTROYED.

	Tons.	Cwts.	Qrs.	lbs.
Central Markets, Smithfield	1,668	13	3	13
Cold Stores	261	17	1	3
Leadenhall Market and City Shops ...	83	3	3	7
Aldgate Market and Slaughterhouses ...	55	3	3	5
Total for the year 1919	2,068	18	3	0
" " " 1918	1,709	19	1	17
Increase	358	19	1	11

Unsound Meat.—The meat, etc., seized during the year by your inspectors as unfit for food is classified as under :—

1919.	Diseased.	Unsound.	Unwholesome.
	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.
First Quarter	109 7 3 27	131 9 1 27	20 11 2 13
Second ,,	44 19 2 7	192 6 1 18	28 17 0 2
Third ,,	31 9 3 3	177 1 0 12	13 15 2 22
Fourth ,,	60 11 0 1	290 4 2 21	35 7 2 3
Total	246 8 1 10	791 1 2 22	98 11 3 12

1919.	Poultry.	Offal.	Fish.	Total.
	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.	tons. cwts. qrs. lbs.
First Quarter	41 3 3 11	68 1 0 24	4 13 2 21	375 7 3 11
Second ,,	30 4 3 5	127 5 0 10	0 11 2 3	424 4 1 17
Third ,,	41 18 0 24	216 11 2 0	2 1 0 18	482 17 1 23
Fourth ,,	141 2 0 1	194 5 2 3	0 16 1 21	722 7 0 22
Total	254 8 3 13	606 3 1 9	8 2 3 7	2004 16 3 17

Central Markets, Smithfield.

Table showing the average deliveries at the Central Meat Market, and other details for successive quinquennial periods during the past 41 years :—

Quinquennium.	Annual Average General Supply. Tons. cwts. qrs.	Seizures by Inspectors. Tons. cwts. qrs.	% of Unsound Meat.
1874-1878	178,373 10 0	192 18 2	·108
1879-1883	218,200 12 3	282 11 2	·129
1884-1888	249,580 19 2	248 1 2	·099
1889-1893	304,986 5 1	461 15 1	·151
1894-1898	372,440 12 2	749 3 3	·201
1899-1903	410,456 18 1	1,082 13 2	·263
1904-1908	414,906 11 1	1,584 19 3	·382
1909-1913	427,146 0 0	1,520 2 3	·356
1914-1918	324,715 0 0	1,370 11 2	·422
1919-	295,044 0 0	2,068 18 3	·7012

Some idea of the amount of the work of your inspectors of slaughter-houses and meat may be obtained from the following figures supplied by the Superintendent of the Market :—

	1915 Tons.	1916 Tons.	1917 Tons.	1918 Tons.	1919 Tons.
Average daily delivery into the Markets	1,220	1,077	922	688	964
*Minimum delivery on any one day	227	139	135	61	107
Maximum delivery on any one day	3,220	2,780	2,397	1,668	2,101
The heaviest weight previously recorded on any one day (22nd December, 1913) was ...			4,398		

*The minimum deliveries relate to Saturdays when practically no wholesale business at the Market is carried out.

The percentages of meat seized under the various headings of the above table during 1919 and for the preceding five years, classed as diseased, unsound and unwholesome, were as follows :—

Year.	Diseased. Per Cent.	Unsound.* Per Cent.	Unwholesome. Per Cent.
1914	10·0	80·0	10·0
1915	11·0	84·0	5·0
1916	13·4	84·1	2·5
1917	8·7	88·9	2·4
1918	10·1	87·7	2·2
Average for 5 years	10·6	84·9	4·4
1919	12·3	82·8	4·9

* Includes poultry, offal and fish.

REPORT UPON A DEMONSTRATION OF THE METHODS OF "STUNNING" ANIMALS FOR SLAUGHTER.

By WM. ST. C. SYMMERS,
Professor of Pathology in Queen's University, Belfast and
JOHN McCLURE BARRY, M.R.C.V.S.,
Veterinary Official to the City of Belfast.

City Veterinarian's Office,
Public Abattoir,
Belfast,
November 15, 1920.

To the Chairman and Members of the
Markets Committee, Belfast Corporation.

MR. CHAIRMAN AND GENTLEMEN,

We beg to report that in accordance with the arrangements made by your Sub-Committee on September 27 and 14th ult., a demonstration of the methods of slaughter of animals for human food was carried out at the Public Abattoir on the 18th ult., the cattle and sheep being provided by the members of the Meat Traders' Association, and the pigs by Messrs. the Irish Bacon Curing Co., Ltd.

For the purpose of this report we will deal with the various animals slaughtered and the method of slaughter adopted.

CATTLE.

Six selected bullocks of uniform age and condition were carefully examined at the abattoir on the morning of the 16th ult., and housed under supervision till the morning of the 18th ult., when they were numbered and placed in the lairage adjoining the slaughter hall where the demonstration was to take place. Two animals were to be stunned by the pole-axe ; two by the "humane killer" (Royal Society for the Prevention of Cruelty to Animals), and two by the hammer, which is the instrument in common use in this abattoir for the stunning of horned cattle.

Lots were drawn for the allocation of the animals to be stunned by the various methods.

Bullock No. 1.—Instrument used, pole-axe. The animal was promptly and efficiently stunned at the first blow (prompt and total loss of consciousness), "pithed," and then bled. Interval between stunning and commencement of bleeding, 35 seconds. The animal, on being stunned, fell with limbs extended. A sample of blood was taken at the commencement of bleeding—blood of a bright red colour.

Bullock No. 2.—Instrument used, R.S.P.C.A. killer. (The operation of this instrument was in the hands of an expert employed by the R.S.P.C.A.) The animal was promptly and efficiently stunned; was not properly "pithed," due to non-entry of the cane. Interval between shooting (stunning) and bleeding, 30 seconds. The animal, on being stunned, fell with limbs firmly flexed. Sample of blood was taken at the commencement of bleeding—blood of a dark colour.

Bullock No. 3.—Instrument used, hammer. Animal was promptly and efficiently stunned at the first blow, falling with limbs extended; extension more marked than in animals stunned by pole-axe. Interval between stunning and bleeding, 44 seconds. Sample of blood taken at the commencement of bleeding—blood of a bright red colour.

Bullock No. 4.—Instrument used, hammer. Stunned and bled as No. 3. Interval between stunning and bleeding, 45 seconds. Sample of blood taken at commencement of bleeding—blood of a bright red colour.

Bullock No. 5.—Instrument used, R.S.P.C.A. killer. Promptly and efficiently stunned, "pithed," then bled. Interval between stunning and bleeding, 45 seconds. Animal fell with limbs strongly flexed. Sample of blood taken at the commencement of bleeding—blood darker in colour than that of bullocks Nos. 1, 3 and 4, but not so dark as blood from No. 2 (killed by R.S.P.C.A. killer).

Bullock No. 6.—Instrument used, pole-axe. Promptly and efficiently stunned, then "pithed." The cane did not enter properly. Interval between stunning and commencement of bleeding, 45 seconds. Fell with limbs extended. Sample of blood taken at commencement of bleeding for examination—blood of a bright red colour.

Examination of Carcases.

At 4 p.m. on the same day we examined the carcases of the above-mentioned six bullocks.

The carcases of bullocks Nos. 2 and 5 (slaughtered by R.S.P.C.A. killer) were darker in colour than the others, and not so well "set."

The carcases of all the animals killed to-day were stored during the night (and till completion of examination) in the lock-up cooling hall rented by the Military Authority (in the abattoir).

On the 19th ult., samples of muscular tissue were taken from all the six carcases for examination (inter-costal and lumbar muscles).

The examination of the carcases reveals no change in the appearances described yesterday, save that the difference in the colour was seen much more clearly in the samples of muscular tissue cut from the carcases for examination.

October 20, 1920.

On careful examination all the carcases were found to be well "set," and the condition was the same as on the 19th ult.

October 21, 1920.

At 10 a.m. a marked deterioration was observed in the condition of the carcase of bullock No. 2 (R.S.P.C.A. killer); also, to a lesser degree, in the carcase of bullock No. 5 (R.S.P.C.A. killer); also, to a still less degree, in the carcase of bullock No. 4 (hammer). The remaining carcases (No. 1—pole-axe; No. 3—hammer; and No. 6—pole-axe) were in perfect condition.

The carcases of all six bullocks were issued to the owners this afternoon (21st ult.), after retaining samples of muscular tissue (sterno-maxillaris) (sterno-mastoid) for further observation.

Examination of Retained Portions.

Samples (No. 1—pole-axe), (No. 3—hammer), and (No. 6—pole-axe) were in perfect condition.

No. 2 (R.S.P.C.A. killer). Markedly deteriorated, decomposition evident, malodorous.

No. 5 (R.S.P.C.A. killer). Markedly deteriorated; dark in colour, not malodorous.

No. 4 (hammer). Slightly deteriorated; not so firm to touch and darker in colour than samples Nos. 1, 3 and 6, but not so dark as No. 5.

October 23, 1920.

The samples present appearances identical with those described yesterday (22nd ult.), save that sample No. 2 (R.S.P.C.A. killer) is still further discoloured, soft and decomposed; sample No. 5 (R.S.P.C.A. killer), decomposition evident; sample No. 4 (hammer), markedly deteriorated; commencing evidence of decomposition.

October 25, 1920.

Samples Nos. 1 and 6 (pole-axe) in good condition.

Samples Nos. 2 and 5 (R.S.P.C.A. killer) badly decomposed.

Sample No. 3 (hammer), markedly deteriorated, but not decomposed.

Sample No. 4 (hammer), showing evidence of commencing decomposition.

October 26, 1920.

Nos. 1 and 6 (pole-axe), sound ; all the other samples show marked evidence of decomposition.

EXAMINATION OF BLOOD FROM ABOVE-MENTIONED SIX BULLOCKS.

The shot animals appeared to bleed quite as well as the others, but the blood was most unmistakably darker in hue. As soon as the blood vessels were cut, quantities of the blood were collected from each of the six animals and set aside. It was seen that clotting took place rapidly and normally in the samples from the animals stunned by the pole-axe and hammer, but in the case of the shot animals the dark blood clotted slowly, being a mere soft jelly in an hour's time, and even after 24 hours had elapsed was still soft and uncontracted. Moreover, the quantity of the serum expressed from these dark soft clots was small in comparison with that obtained from the firm red clots of the other animals. Also the scanty serum was much redder in tint (Haemolysis) than the clear amber serum of the animals stunned by the pole-axe and hammer.

The clots were allowed to stand in a cool place for 48 hours, and the quantities of serum obtained were measured. 250 c.c. of blood were taken from each animal with the following results :—

Animal No. 1 (pole-axe), furnished 90 c.c. of serum, clear.
Animal No. 6 (pole-axe), furnished 95 c.c. of serum, clear.
Animal No. 3 (hammer), furnished 95 c.c. of serum, clear.
Animal No. 4 (hammer), furnished 50 c.c. of serum, clear.
Animal No. 2 (humane killer), furnished 10 c.c. of serum, pink.
Animal No. 5 (humane killer), furnished 50 c.c. of serum, pink.

It appears that blood from the shot animals furnishes distinctly less serum than blood from the animals stunned by the pole-axe, distinctly less than blood from one of the animals stunned by the hammer, and an equal amount with the second of the latter. Moreover, the blood of the shot animals furnishes serum more highly coloured (haemolytic) than does the blood from animals stunned by pole-axes or hammer.

SLAUGHTER OF SHEEP.

For the purpose of this experiment, three sheep were shot by the slaughtering expert of the R.S.P.C.A. with a pistol. All these sheep were efficiently stunned in addition, three sheep were slaughtered by the method in ordinary use in the abattoir (division of the great vessels of, and breaking of, the neck), they bled at once most copiously, so that, notwithstanding the absence of previous stunning, unconsciousness very quickly supervened owing to failure of circulation in the brain (cerebral anæmia).

The carcases of the above-mentioned six sheep were kept under observation until 12 o'clock noon on the 21st ult.

No difference whatever was observed in the quality of the mutton in any of these six sheep.

Slaughter of Pigs.

Pig No. 1.—Shot by pistol (as used for stunning sheep). This pig was shot after the operator had experienced difficulty in obtaining the necessary accuracy of aim. 38 seconds after shooting, the animal was bled in the usual manner. We do not consider that this animal was efficiently stunned. Exaggerated muscular movements persisted for a considerable period. Death resulted 10½ minutes after shooting.

Pig No. 2.—Stunned by wooden globular mallet. The animal was promptly and efficiently stunned at the first blow. Complete loss of consciousness and practically all movement. Bled in usual manner 30 seconds after stunning, died quickly.

Examination of Carcases at 4 p.m. same Day (18/10/20).

Pig No. 1.—Shot by pistol. The carcase was not well "set." The internal fat "splashed," striped red in patches, indicative of imperfect bleeding. Post-mortem examination of the head revealed that the pig had been shot too low in the forehead; the brain substance was practically uninjured, save the extreme tip of fore part of the organ. The brain was covered with hæmorrhage.

Pig No. 2.—Stunned by wooden globular mallet. The carcase was well "set." No discolouration. Post-mortem examination of head revealed that the bones of the skull were not fractured. The brain showed no injury visible to the eye.

Summary.

In conclusion we desire to offer a brief summary based on the foregoing details.

Sheep.—As regards the sheep, we found that the keeping quality of the flesh was equally good in all six animals. Three of these were bled without previous stunning, and three were first stunned by the pistol (shot) and then bled. There can be no question that the shot animals were instantaneously stunned, and therefore unconscious. On the other hand, the clean cut of the knife in the unstunned animals was raipdly followed by unconsciousness. The free bleeding almost immediately depriving the brain of blood and consequently producing unconsciousness.

As between the two methods, there is little choice from a humanitarian point of view; at the same time whatever superiority exists is in favour of the pistol—always provided that the bullet actually pierces the brain.

Pigs.—As regards the pigs. In this experiment we have no hesitation in stating that the mallet was the better of the two methods. The work was more quickly done, the stunning was instantaneous, and, moreover, the flesh of the shot pig was not in so good a condition as the flesh of the animal stunned by the mallet.

Cattle.—Here we have a case of six bullocks—two stunned by the pole-axe, two by the hammer, and two by the R.S.P.C.A. killer (shot).

These six animals were each instantaneously stunned by the method employed, so that as regards the painlessness of their death there was no superiority of one method over the others, but in making a choice it must be stated that the pole-axe was superior to the two other methods, for two reasons :—

1. The flesh kept better.
2. The blood from the animals stunned by the pole-axe furnished the greatest quantity of serum. Also the quality of the serum was for commercial purposes distinctly better than that obtained from the blood of the shot animals, and also better than that from the blood of one of the animals stunned by the hammer.

We beg to add that in the above experiments all the operators were experts in their work, and we believe that the slaughtering of animals should be confined to men who are thoroughly qualified for their responsible duty.

Clinical.

TWO CASES OF ASPHYXIA IN THE HORSE FROM RARE CAUSES, WITH REMARKS ON SPLITTING THE SOFT PALATE AS A MEANS OF DIAGNOSIS, TOGETHER WITH OBSERVATIONS ON TRACHEOTOMY.

By MAJOR-GENERAL SIR FREDERICK SMITH, K.C.M.G., C.B., F.R.C.V.S.

PROFOUND difficulty in breathing, with threatened asphyxia, may arise from many causes. The two cases to be related are most unusual, and both are highly unsatisfactory.

Case 1.—In March, 1888, I saw in consultation a horse which had suddenly been seized with asphyxia, necessitating the immediate insertion of a tracheotomy tube. In the previous November the animal had been under treatment for catarrh and then for lameness, thought to be due to rheumatism. At the date of the consultation there was a discharge from the near nostril, a small quantity of pus streaked with blood being observed. When the tube was closed the horse was threatened with immediate suffocation. Everything in the region of the larynx appeared normal. The animal was cast and a thorough

exploration of the fauces and glottis made through the mouth. All that could be detected was a little fullness beneath the guttural pouch. The crico-thyroid ligament was then incised and the interior of the larynx examined with the finger. Everything appeared normal. A catheter was then passed through the crico-thyroid wound and readily entered the mouth and the nostrils. The nasal chamber was then trephined and an inspection made; this revealed nothing abnormal.

A few days later, as the symptoms still appeared on the slightest exertion, an examination of the fauces was made under chloroform, but with no satisfactory result. The wounds in the larynx and face were allowed to close. The tracheotomy tube had still to be worn, as the animal roared at a slow walk. Four weeks later, as the symptoms of dyspnœa continued unabated, the animal was again placed under chloroform and the soft palate incised in the central line to an extent sufficient to admit three fingers; in this way the whole of the pharynx was thoroughly examined. No growth could be felt, though the existence of one was suspected.

Splitting the soft palate is, so far as I know, a new operation, and an account of it may be desirable. I was familiar with the procedure, as I had endeavoured unsuccessfully to stop wind-sucking by completely dividing this structure. The palate is first punctured about its centre. I employed the old-fashioned phlebotomy instrument as being well guarded, and when it has pushed and scraped a way through the thickness of the membrane a finger is introduced, and between finger and thumb the part is rent in the direction of its length. It tears with moderate ease, and there is practically no hemorrhage. A good mouth gag which bears on the incisor teeth is indispensable. In the case of the horse under record it was not considered necessary to do more than make an opening sufficiently large to admit two fingers to thoroughly sweep around the pharynx. Subsequent events showed that it would have been better had the entire length of the structure been divided and the whole hand introduced. When there is a tube in the trachea a deliberate examination can be made. The result in this case was negative; the fact is that the examination was imperfect, and that had the entire palate been divided I would have found the cause of the obstruction, as will be seen when the post-mortem appearance is described.

Before the last operation I removed the tube from the trachea and inserted one in the crico-thyroid space. The reason for this was that I dislike a tube in the trachea, as in consequence of irritation and cicatrical contraction malformation of the organ results, which renders the horse a permanent roarer or even unfit for light work. It was thought that no contraction could occur in the crico-thyroid

space, and a special tube was fitted and attached to the head collar, as it had a tendency when tied round the neck to fall foward and come out. The laryngotomy tube was worn for ten days before death occurred ; one night it came out and the animal was found dead in the morning.

On post-mortem examination a suppurating lymphatic gland, the size of a large egg, was found between the base of the left guttural pouch and the roof of the pharynx. The swelling resulting from this enlarged gland was drawn into the glottis at each inspiration. The guttural pouch was thickened. There was evidence that the pus in the gland was working upwards to be discharged into the pouch. This swelling would have been discovered during life had I given myself more room to work by completely dividing the soft palate.

The result of the laryngotomy was most unsatisfactory. There was submucous œdema of the larynx, the membrane being roughened by the irritation of the tube. The thyroid cartilage was very rigid from inflammatory changes, the cricoid congested, the crico-thyroid ligament cartilagenous, and the arytenoids so stiff that they could only be made to slightly move by forcibly pulling them apart.

Remarks.—The suppurating lymphatic gland was doubtless the result of strangles infection.

There is no advantage in laryngotomy over tracheotomy ; both are serious operations in their after effects. A divided trachea contracts, the rings overlapping ; at times they unite by ossification, at others they are drawn inwards and curled by cicatrical contraction ; in consequence the lumen of the tube is greatly reduced. I never undertook this simple operation without the feeling that, though I was about to give immediate relief to a most distressing condition, the after effects on the trachea would be a standing reproach. I have had a few exceptions. When matters are not extremely urgent I have exposed the trachea deliberately, cut the membrane between the rings transversely, and removed as little as possible from the upper and lower rings, just sufficient to admit a small-sized tube. As a rule the extreme urgency of these cases does not admit of deliberate measures, and we are glad to get the knife into the lumen of the trachea and stop further suffocation.

It is obvious that the smaller the size of tube we employ the less the damage to the tracheal rings. I gradually reduced the diameter as experience dictated, but the disadvantage of a very small tube is that it so readily becomes clogged with discharge, the serum coating it with the firmness of glue, necessitating considerable attention if it is to function properly. In recommending a tracheotomy tube of small diameter I am referring solely to a temporary operation, and not

to the permanent one employed in the relief of roaring. No horse can work with a small tube. As a profession we have had enormous experience during the last thirty years in tracheotomy. My experience points to a contraction of the trachea at the seat of operation, and if anyone can prevent this either by a modification in operation, or in the shape of the tube, he will be a public benefactor.

It will be observed that the short period of ten days was sufficient for laryngotomy to convert the larynx of the case above recorded into a hopeless condition, though the tube employed was small and did not appear to produce irritation. Personally I should not entirely despair of laryngotomy as a substitute for tracheotomy until I had tried a tube in the crico-tracheal space, though against this we have learned in numerous operations how readily the cartilages of the larynx become inflamed as the result of irritation in their vicinity, and the disastrous results which invariably follow. A rigid cricoid, however, is far less serious than a rigid thyroid.

Case 2.—In September, 1891, a horse was suddenly seized with intense dyspnœa and its life saved by inserting a tube in the larynx. This remained in only for a few hours, as all symptoms of suffocation passed away and could not be reproduced by closing the tube. Under chloroform the fauces were examined through an incision in the palate and a slight thickening above the pharynx was discovered, but nothing definite. The animal was given a long rest of six weeks and the "wind" then tested, when the patient was found to "roar" badly. A second examination of the pharynx revealed nothing. In consequence of his contracting mange a further long rest resulted, but in the following January, while at walking exercise, the patient was seized with acute dyspnœa, and a tube had to be inserted in the trachea; this was removed in a few days as it was no longer required. A fortnight later, while quietly standing in the stable, the animal suddenly suffocated.

Post-mortem examination revealed a few enlarged lymphatic glands between the guttural pouch and pharynx, but they were so small that they could not have been drawn into the glottis, as in Case 1. The whole length of the head and the larynx were carefully examined, but nothing abnormal was revealed. The heart was enlarged, the mitral and aortic valves were thickened and possessed vegetations; the aortic valves were very large and rigid, and the aorta dilated.

Remarks.—This was a very unsatisfactory case. That the suffocation was produced in the larynx, or anterior to it, is certain from the relief afforded by laryngotomy and later by tracheotomy. That the dyspnœa was sudden, temporary and recurrent is clear from the history of the case, but its precise nature is a hopeless mystery. Was it spasm

of the glottis? I have seen many cases of laryngeal spasm from poisoning by the Indian pea *lathyrus satious*, but in all these cases the animals had to be walked before any dyspnœa occurred. The case under record suffocated while standing quietly in the stable. I fail to connect the heart lesions with the symptoms of asphyxia. Fibrillation of the auricles in the horse produces extreme distress and dyspnœa but not roaring. That death was due to suffocation, and not to the condition of heart, was proved by the presence of well-marked post-mortem appearances of asphyxia.

SOME NOTES ON INTERNAL PARASITISM IN HORSES.

By D. MARSHALL, M.R.C.V.S.,
Balclutha, Otago, New Zealand.

THE following notes were put together after perusal of the interesting case of "red worms" described by Mr. R. Beattie in THE VETERINARY JOURNAL for May. The cases indicate that in this Province, Otago, N.Z., nematode worms in horses are responsible for much loss. They may directly or indirectly cause the death of the host, or produce such loss of condition that it is unfit for work. It is probable that with a thorough post-mortem examination many cases of volvulus of large or small intestine might be traced to parasitic lesions in the blood-vessels even if parasites were not at the time present in the lumen of the bowel.

These parasites would seem to behave occasionally like some of the micro-organisms present normally in the respiratory and alimentary tract, in that a sudden lowering of vitality may render them pathogenic. In two of the cases described the animals were in good condition. A day's unusually hard work produced signs of illness, and then only was the presence observed of large numbers of parasites.

Maurice Hall, in the valuable articles reprinted in THE VETERINARY JOURNAL, August, 1919, from the *Journal of the American Veterinary Medical Association*, December, 1919, etc., after giving the results of various experiments to test different anthelmentics, concludes that carbon bisulphide is 100 per cent. effective against bots and ascarids, and that oil of chenopodium plus a purgative after a fast of twenty-four hours gives reliable results against strongyli, turpentine and linseed oil being the next best. As oil of chenopodium is not obtainable here, the treatment has consisted of a course of eight to twelve daily doses of cupri. sulph., ferri. sulph. and arsenic, followed by one and a half to two ounces turpentine in 1½ pints raw linseed oil, after fasting eighteen to twenty-four hours. The results have been satisfactory in many cases.

Case 1.—Five-year-old draft gelding, in fair condition, showing symptoms of impaction of colon, dull, mild pains, loss of appetite,

impacted bowel palpable per rectum, pulse *weak*. Treatment by 2-drachm doses each amm. carb. and nux vomica three times a day. At the end of four days the impaction was apparently relieved, animal was feeding, pulse still very weak, and gait staggering. Fæces were soft, and contained large number of cylicostomes. Gradual recovery under tonics.

Case 2.—Eighteen months old Clydesdale filly, in fair condition. Dull, refusing feed, up and down, and inclined to sit on haunches; no evidence of acute pain, temperature 102, *pulse* 110, respirations normal, rectal examination negative.

Diagnosis.—None made. At first suspected some obstruction in small intestine, but mild nature of pain negatived this. Could not account for fast pulse.

Gave amm. carb. 1 drachm, ol. tereb. and æther sulph. *aa.* ½ oz., in repeated doses.

Following day: Little change, peritalsis slightly increased, pulse 100. When let out moved very stiffly, but started to feed. Continued stimulants.

On fourth day filly was very uneasy, turning round and round in a small circle, respirations accelerated and grunting, pulse 110, temperature 103. As filly was suffering much pain and getting worse in spite of treatment, though diagnosis was still obscure, destruction was advised, and immediately carried out.

Post-mortem.—Showed considerable reddish fluid in peritoneal cavity, gastric omentum thickened and adherent to large colon, peritonitis over serous covering of large colon, accounting for stiff gait and fast pulse, mucous membrane of large colon much infiltrated, and showing numerous whitish patches 1 to 2 inches across, and small areas of ulceration and necrosis. Large numbers of a reddish nematode, about 2 inches long. Strongylus equinus (?) adherent to mucous membrane. Mesenteric arteries at origin showed verminous endarteritis ulceration, thrombi of varying ages, and numerous nematodes, not identified.

Case 3.—Really a series of cases on the same farm, low ridges, boggy creeks in the gullies, opening into sandy river flat.

(*a*) Six-year-old draft gelding, ailing some time, very thin, conjunctiva and buccal mucous membrane very pale, eye sunken, pulse weak, gait staggering.

In fæces numerous young strongylus of cyliostome group.

Following powders were given daily for twelve days :—

Arsenic, grs. v.	Antim. pot. tart., 2 drachms.
Pulv. nux vom., 1 drachm.	Ferri sulph. ex., 1 drachm.

followed by ol. tereb. 1½ ozs., in ol. lini. 1 pint, given after 18-hour fast.

Contrary to expectation, this colt made a rapid recovery, and when next seen two months later was not recognisable, and "full of beans."

(*b*) Six-year-old draft mare, very dull for some days, and off feed. Temperature 100, pulse 45, steady ; loud borborygmi ; scouring, and tail covered by excreta, amongst which were many red worms of cyliostome group. Other symptoms were repeated yawning and sour breath.

A diagnosis of parasitic muco-enteritis was made.

A full dose of spirits ether nit., the only available stimulant, was given, cinchona and ferri. sulph. *aa.* 1 drachm, amm. carb. 1½ ozs., twice a day for six days, followed by ol. tereb. 1½ ozs., ol. lini. 1 pint, after 18 hours' fast. This mare made a good recovery.

Several of the other horses on this farm had shown somewhat similar symptoms. A period of dulness, partial loss of appetite, and repeated yawning, no diarrhœa.

Case 4.—Aged draft mare, ridge country, suffering from chronic tympany, food improperly digested, fæces evil smelling, temperature 101, pulse normal, condition poor, rectal examination negative. Examination of fæces for parasites or eggs was negative.

Diagnosis.—None made. Probability of some result of parasitism. Alteration in the colic mucous membrane or embolism of mesenteric vessel was suspected.

Treatment.—Arsenic grs. v., ferri sulph. *ex.sic.* 1 drachm, cinchona 1 drachm, in feed daily for twelve days.

This mare improved gradually.

Four months later was called again to this mare. Now in good condition. Dull and showing abdominal pain, never acute, eye sunken, pulse accelerated and weak, temperature 102. Mare staggered once or twice as if giddy, while being moved. Scouring, fæces thin, watery, blood tinged, contained scraps of coagulated fibrin. Where the liquid collected in a pool on the ground the surface was agitated by wriggling cylicostomes, present in great numbers. Even the thermometer, when withdrawn from the anus, had on it six or eight squirming young forms.

Gave ether nit. 2 ozs., camphor 1 drachm, tr. capsici 1 drachm, ol. tereb. 4 drachms, and followed twice a day with ether sulph. 2 ozs., ol. tereb. 1½ ozs., for three doses. The mare bucked up wonderfully.

Case 5.—Clydesdale mare, working hard, one morning refused food at noon, and for 48 hours after up till time I saw her, when she was dull, very slight evidence of pain, peristalsis audible, pulse 50-55 and good, temperature normal (per rectum). Rectum contained

soft fæces in which were numerous cylicostomes ; small colon empty, pelvic flexure normal, right lower part of colon impacted.

Diagnosis.—Impaction of colon, induced by parasitic invasion.

Treatment.—Amm. carb. and nux vomica, each 2 drachms, three times a day.

Two days later animal still dull and appetite poor, fæces thin, contained numerous cylicostomes, pulse weak. Treatment changed to ether sulph. 1 oz. once a day ; not enough, in the circumstances, and later gentian, iron and arsenic. The mare was pretty weak for some days, but gradually improved.

Case 6.—Four-year-old draft colt on same farm as No. 5. Somewhat similar symptoms after stiff spell of work, *i.e.* dulness, depression, loss of appetite, weak pulse, diarrhœa. This animal was prescribed for by post, and, owing to this delay, was not treated for two days. In the meantime it developed symptoms of acute pneumonia, and died after 3½ days' observed illness.

Post-mortem.—Slight excess of fluid in peritoneal and pericardial cavities ; mucous membrane in large colon and cæcum inflamed, thickened, covered with nodules, small ulcers, and dirty grey patches of necrosis, particularly towards point of cæcum. Large numbers of cyliostomes present. Pleurisy of left side of chest, with some exudate, left lung consolidated. In trachea numerous egg-bearing female nematodes, *Dictyoca ulus Arnfieldi* (?). This farm was fairly high land, running down to the sea.

Case 7.—Death from ascariasis. Clydesdale gelding in fair condition ; died after about an hour's observed illness with acute pain.

Post-mortem.—Ingesta present in peritoneal cavity when opened. Ante-mortem rent in wall of pyloric part of stomach, with several small ulcers or tears in mucous membrane surrounding it. Large numbers of bot. larvæ, with heads embedded in mucous membrane of œsophageal part. Slight excess of pericardial fluid. Duodenum felt firm to touch, and was packed with ascaris megalocephali. On an estimate over 750 present. The lumen of bowel was completely obstructed. The owners were rather inexperienced, otherwise it is probable that some earlier symptoms would have been noticed.

PARTIAL PARALYSIS OF THE SINGLE COLON.

By W. T. HEWETSON, M.R.C.V.S.,
Brampton, Cumberland.

In November, 1919, I wrote an article to The Veterinary Journal on a disease that I called " partial paralysis of the single colon." Up to that time I had failed to cure a single case, though many drugs were tried, and I had taken the opinion of three of my professional

brethren, and searched the veterinary literature at my disposal for information. Since then I have had five more cases, and four of these died. I am pleased to say that the last case that came under my care recovered. The cure was effected very simply. As some of my readers may be unfamiliar with the complaint alluded to, I will again record the symptoms of the malady. The disease appeared in the months of July and August in mares and geldings, their age being from 3½ to 5½ years. The animals became affected when running out on grass. The symptoms manifest were present in each case, viz., the flanks are tucked up, giving the animal the appearance in this respect of a greyhound. The horse has lost condition, and the muscles feel hard, particularly in the region of the neck, which is usually depressed, like that of a sheep or camel. The horse looks dull, and the eyelids are sometimes kept half-closed. On lifting the tail the anus, and, if a mare, the vulva and skin adjoining are found to be bathed with perspiration. Tremors are seen on the muscles of the shoulder and hip. The respirations are normal, with the exception that a muffled sound can be heard, as if there was an obstruction caused by mucus in both nostrils. The pulse is weaker and quicker than normal, viz., 60 or 70 beats per minute. The temperature may be normal, or it may be as high as 105. The appetite is impaired, though not entirely lost. The bowels are constipated, the fæces being passed in small quantities and coated with mucus. The horse exhibits a difficulty in swallowing, and medicine, either in ball or liquid, is difficult to administer on this account. When liquids are administered there is a danger of choking.

Post-mortem.—I made a post-mortem on all the animals that died, with one exception. The post-mortem lesions were the same in every case. All the intestinal organs appeared to the naked eye to be normal, except the single colon. On examination this bowel was found to contain here and there hard, dry fæces covered with mucus, and when removed they left a raw or congested surface beneath. Evidently the fæces had been retained and become coated with mucus due to the torpidity of the bowel. Congestion more or less of the inner surface of the single colon was found in all the cases.

Cause.—It might be attributed to the condition and ripened state of the grasses at this time of the year. Personally, I am inclined to think the cause is more likely to be due to cold nights following warm days, and this acting more readily upon horses that are teething. The cold has a paralysing effect upon the bowel ; the injecta is retained longer than it ought to be, undergoes decomposition, a poison is generated and absorbed, causing loss of appetite, loss of flesh, and

giving rise to the tremors seen on the muscles and the increase in the temperature and pulse.

Treatment.—In the early cases the treatment adopted was as follows: A moderate dose of opening medicine was given, *i.e.* aloes, followed by nerve stimulants—pulv. nux vom. and ammon. carb. in form of ball. After the medicine had acted the horse appeared much improved. He moved about more, and was more anxious for food. He did not care for soft or semi-liquid food, but would take green food, such as newly-mown grass or a little crushed oats. At the commencement of the treatment there was not any anticipation that the horse would die. After the patient had eaten fairly freely of this green food for two or three days he became duller, and the symptoms that had become less pronounced reappeared. The fæces again became dry and covered with mucus. The dose of laxative medicine again had to be given. Some of the animals at this stage would lie and exhibit signs of dull pain, looking occasionally back at the flank. They continued to do this more or less until the bowels were relieved by opening medicine and enemata.

In the early cases many and varied were the medicines given to combat the different symptoms that arose during the course of the disease. The patient being again and again better and worse. This continued for about a month, when the animal was found unable to rise, and when lifted would lie in the slings, and made no attempt whatever to gain his feet if left lying on the ground. It died in 24 to 48 hours. The cases were most unsatisfactory and disappointing.

When my last case arrived I resolved to adopt a totally different line of treatment. Instead of feeding the horse on grass and semi-solid food, as I had previously done after the bowels were moved by medicine, I determined he should receive only liquid or semi-liquid diet, though he preferred grass and dry food. I made up my mind that he must be made to take liquids or semi-liquids, or die. He refused for four days after the bowels were moved by medicine to take any of this, but on that day he took a bucketful. He was fed on semi-liquid diet for one month. To make sure that no solid or dry food was taken the box was bedded with sawdust. The food given consisted of boiled turnips, boiled barley, linseed, and bran, with a liberal supply of salt in each feed. Milk on the farm was not plentiful, but he did not care for milk. Otherwise it might have been good for him The only medicine given was a laxative ball, followed by an occasional ball composed of ammon. carb., nux vom. and gentian. When the latter was not given he received a drachm of nux vom. pulv. in his food daily.

In about a fortnight the horse showed marked signs of improvement. The noise heard from the nostrils ceased. The tremors of the muscles

had disappeared. Up to this time his rug was seen to be covered on its upper surface with moisture, as if a dew had fallen upon it. This became dry. The perspiration under the tail ceased, and the horse was brighter and more active. He moved more freely around the box, and the eyelids did not droop; the pulse being now normal, also the temperature.

The patient was kept on soft diet for a fortnight longer (though this may not always be necessary). During this time the bowels were kept regular by diet only. He did not require any opening medicine or injections of soap and water per rectum to keep them open. Under this simple treatment the horse made a good recovery, and this was brought about with much less anxiety and only half the trouble and expense entailed in the cases that died. The horse is still low in condition, but in this he will improve, as he eats anything and everything that is given to him.

TOTAL OBSTRUCTION OF SMALL BOWEL BY AN INGESTED STONE.

By HUGH BEGG, F.R.C.V.S.,
Veterinary Inspector for the County of Lanarkshire.

THREE years ago, when passing the premises of the Hamilton Co-operative Society, I met Mr. James Pollock, Veterinary Surgeon, who told me he had been attending a very interesting case that had been troubling him for fully three weeks.

The animal, a six-year-old Clydesdale gelding, had been the subject of periodic abdominal pain during that time, and when I met Mr. Pollock he was beginning to consider the case hopeless.

The first attack of pain had been prolonged, and the symptoms were rather ominous, but after three days there had been a gradual recovery, though the horse was much worn with exhaustion. He was offered nothing but bran mashes and other soft food, which he took freely when rid of pain.

When Mr. Pollock told me of the case the horse had suffered five or six bad turns, and he thought there was some obstruction that was not removable. When I saw the horse that day the signs of abdominal pain were well-marked and characteristic, but the animal was not violent. At times he would stand for fifteen minutes on his hind feet while resting on his knees in front, and this position seemed to afford greater relief than any other, and indicated the tilting forward of the obstruction Mr. Pollock feared. On one or two occasions when the pain returned the patient sweated profusely from the very start. On the day I saw him his skin was steaming, the pulse was rather worn, and the temperature 103° F. He strained when examined

per rectum, and nothing abnormal could be felt within reach, so that suspicion attached to the small bowel. An unfavourable prognosis was given to the owners.

From this time, until his death seven days later, the horse was more or less in constant pain. During the first three weeks recovery seemed so nearly complete that he was on the eve of going on duty on two occasions, when pain again returned.

Mr. Pollock made a post-mortem examination, and advised me that he had at his place a portion of the small bowel from which he had removed the composite stone which I have sent to you. The stone was more or less covered by inflammatory exudate of the area of enteritis set up by its presence.

The stone* was evidently a piece of the kiln-dried ornamental facing of the stable wall, and but for its very rough borders might have occasioned very little trouble. I have, however, never known a horse to swallow an unchewable hard body so large as this ; indeed, it has been my experience that all coins, stones, nails, and other metallic substances that found their way into the chop bin were eventually recovered in the horses feeding trough.

INTERESTING CASE IN A MARE.

By H. G. HEWETSON, M.R.C.V.S.,
Southport.

THESE notes are of an interesting case which I had under my care for nearly three months, and which ultimately had to be destroyed owing to the subject proving incurable. The history of the case is as follows :—The mare in question was a four-year-old vanner, bred by the owner, brought up on the farm, and never had a day's sickness in her life until attacked by this illness which proved fatal.

The first time the owner noticed that there was anything wrong with the mare was on or about July 16, 1920, and the four subsequent days, when he observed that the mare was isolating herself from the other horses at pasture in the same field, was not feeding, and would remain standing in one position for some time, but if approached by anyone she would move away and commence to pasture. The other animals, two young colts, remained healthy. The owner thought very little of this for three days, but on the fourth day he decided to have the mare caught and brought up into the farmyard to be examined. He kept her up, and on July 24 he called me in to attend to her, and I was in regular attendance on her until October 14 last, when the

* The portion of stoneware sent by Mr. Begg measured $2\frac{1}{2} \times 2 \times \frac{3}{4}$ inches, a most unusually large foreign body for a horse to swallow.—(Editor VETERINARY JOURNAL.)

animal got down in the box, and being unable to rise, owing to weakness, she was destroyed.

Symptoms.—On the first day I saw the animal I decided, after a careful examination of the patient, that I had a very uncommon and serious case to deal with, and I could not recall ever having seen a similar case before. On looking over the mare I found her general bodily condition to be good, visible mucous membranes of ordinary appearance, breathing, pulse and temperature practically normal, but she was showing a peculiar eruption and exudation from the skin round all four coronets, the site of the chestnuts on the hind limbs, and the mammary glands, which were atrophied. From the top of all four hoofs, for a distance of about 2 inches, the hair had been cast off and the skin was exuding an amber-coloured discharge, the odour of which resembled that from a greasy-legged animal. The hind chestnuts had dropped off, and the discharge from their sites and the skin of the mammary gland was similar to that from the coronets. Another important symptom was a relaxed condition of the bowels, which, during the period of illness, gradually developed into diarrhœa, in spite of all treatment. After the case had been under treatment for about a month more eruptions with exudations took place on the legs and head. The front chestnuts dropped off and became similar to the hind ones, and eruptions appeared around the eyelids, nostrils and lips, and I might state here that throughout the whole course of the illness none of these surfaces showed the slightest tendency to heal. Emaciation commenced, and gradually became worse, and on the day of her death she was a mere frame.

Treatment.—I think it must be admitted, after reading the history and symptoms in this case, it was a difficult matter to diagnose correctly the exact nature of the disease the mare was suffering from. However, I came to the conclusion that all these external symptoms were secondary affections due to an internal cause of some kind, probably affecting the alimentary tract, and that nature was doing her best, through the bowels and the skin, to throw out the poisons which were causing trouble. The treatment received during the course of the illness was—first of all she was placed in a large loose box, which was kept as clean and sanitary as possible, and given an aperient of linseed oil and turpentine, and this was followed up internally by good food, tonics, astringents and antiseptics, and externally by the application of liquid and dry antiseptic dressings. During the illness several veterinary colleagues saw the mare, and about fourteen days prior to death Mr. Hy. Sumner was called in consultation. He agreed that the cutaneous lesions were the result of some absorption of deleterious material, which most probably had its origin in the double

colon and cæcum. Parasites were sought but not found. As a precaution (uræmic poisoning) the urine was drawn and examined. This was normal in colour and quantity, and on sample examination did not react to the test for albumen or sugar.

Post-mortem.—October 15, 1920, when the carcase was opened, the first thing one noticed was the pale appearance of the bowels, with a very marked leopardised pigmentation all over them, especially the small bowels. The whole of the abdominal lymphatic glands were enlarged, especially those of the double colon and cæcum ; those of the latter were mottled with small opaque grey centres, suggestive of miliary tuberculosis. A section was made into tip of cæcum in further search for parasites, which were not present. The mucous membrane showed several widely scattered superficial ulcers the size of a thumb nail. In completing the section of the organ there was exposed a greatly enlarged ileo-cæcal valve, with considerable thickening of the surrounding mucous membrane and submucosa. In several places the membrane was eroded, presumably the result of local superficial necrosis, and the growth extended into the membrane of the forth portion of the double colon. The condition of the ileum was interesting. It showed several concentric bands, about 4 to 8 inches apart, for about 2 ft. before entering the valve, evidently indicating some continued extra effort to pass the ingesta through the ileo-cæcal valve. The lungs, heart, liver, spleen, and kidneys were normal in structure, but some parts showed signs of catarrhal affection, and the ovaries were cystic.

Mr. Hy. Sumner was present at the post-mortem, and he has revised these notes. Portions of the growth were sent to Professor Glynn, Liverpool University, and the result of his examination is that it is a lympho sarcoma.

SOME CANINE CLINICAL NOTES.

By JAS J. O'CONNOR, M.R.C.V.S.,
Professor of Surgery, Royal Veterinary College of Ireland.

I.—Foreign Body in the Œsophagus.

Subject.—Field spaniel.

History.—The dog had been ill during about six weeks, vomiting, or attempting to vomit, repeatedly, but was able to take sloppy diet. During this time he was under veterinary treatment for gastritis, and, no improvement occurring, further advice was sought, when obstruction of the œsophagus at the entrance to the chest was diagnosed and confirmed by me.

Symptoms.—Those of dysphagia and a swelling at the level of the œsophagus in the prepectoral region. The œsophageal sound was arrested at this point.

Treatment.—Performed œsophagotomy under $Ch.Cl._3$ at the level of the obstruction, and discovered a large irregular piece of cartilage emitting a stinking odour lodged in the gullet, which was necrosed and perforated in the region pressed upon ; removed the foreign body, washed the wound with a solution of pot. permang. and left it open throughout.

The dog was fed on milk diet for a few days, and afterwards on mixed diet. The œsophageal fistula gradually closed, and was completely healed in the course of three or four weeks.

One year afterwards the dog was reported as doing well on a shooting expedition with his owner in Scotland.

It was surprising that the animal was able to swallow at all, and that he remained in good condition with so large and apparently complete an obstruction. Moreover, the œsophagus was so much damaged one would have expected stenosis to supervene within twelve months afterwards.

2.—

Subject.—Scottish deerhound.

History.—After partaking of chicken bones the dog showed symptoms of choking.

Symptoms.—On examination of the cervical portion of the œsophagus a slight swelling was detected at the level of the larynx, but nothing definitely could be felt. The animal evinced pain on manipulation of the part. It was concluded that this was the seat of obstruction.

Treatment.—Injected a solution of cocaine hypodermically in the place mentioned and performed œsophagotomy there. On passing a forceps into the œsophagus it grated against a piece of bone, fixed transversely in the tube ; removed it and found that it was a splinter of chicken bone about 1½ inches long, and sharp at both ends. Completely sutured the œsophageal wound, and partly sutured that in the skin. Sent the dog home at once. Recovery was uninterrupted.

3.—Foreign Body in the Larynx.

Subject.—Pekingese dog.

History.—Twenty-four hours previously the dog had been very frisky, playing about, when it suddenly stopped, and showed great distress, panting rapidly. The owner believed that it picked up something during play.

Symptoms.—The animal was suffering from severe dyspnœa. The mouth and throat were examined, and nothing could be seen. A little water was then given to see if it could swallow freely, and made the animal cough. Re-examination of the pharynx and larynx revealed something abnormal in the lumen of the latter. On removing it

with a forceps it was found to be a piece of a skin of a boiled potato. After its extraction the animal became quite normal.

A little water evidently entered the larynx and caused the foreign body to be coughed into view.

4.—Tumour of the Testicle.

Subject.—Clumber spaniel, a very good shooting dog.

History.—The tumour had been noticed for some few weeks, gradually increasing in size, and latterly becoming very painful, causing the animal to lie down repeatedly after going a short distance.

Symptoms.—A nodular, hard, irregular tumour, about the size of a man's fist, involving the right testicle. It was not ulcerated.

Operation.—Having administered chloroform, an incision was made encircling the tumour near its neck, exposing the spermatic cord, which was considerably thickened.

The latter was severed as high as possible with the emasculator which, however, did not prevent hæmorrhage, and a ligature was consequently applied on the bleeding stump.

When the patient recovered from the chloroform he evinced signs of severe pain. Two grains of morphia were then given, but proved insufficient. Another grain was consequently injected and had the desired effect, causing the animal to go into a dead sleep for twenty-four hours.

From naked eye appearance, and by analogy from previous cases, I thought the tumour was sarcoma, and that it would recur. The wound, however, healed well, and six months afterwards the dog was in perfect form. The tumour was accidentally thrown away preventing microscopic examination thereof.

Since writing the above I have learned that the dog commenced to evince pain again about 7 months after the operation, and the owner then destroyed the animal ; presumably the tumour was recurring.

5.—Puppy Devoid of Eyes.

Subject.—King Charles spaniel, said by owner, a fancier of this breed, to be an ideal specimen in every way except for the absence of eyes.

The eye lids were perfectly formed over orbits filled with fibrous tissue. The puppy was destroyed, and post-mortem examination revealed no trace of eye-balls.

6.—Ventro-fixation for Prolapse of the Bowel with Invagination.

Subject.—A valuable pointer dog, about six months old.

History.—The dog, which was in fair condition, and apparently in the best of general health, had been under veterinary treatment for about two months on and off for prolapse of the bowel with invagination. The longest time the affected portion of bowel remained

in the abdomen after being returned and the anal suture removed was ten days. As a rule the prolapse recurred a few hours after removal of the suture in the anus.

Symptoms.—The prolapsed mass extruded for about 10 inches behind the anus. The posterior part of the rectum was evidently not involved in the condition, as there was a deep space all round between the prolapse and the rectal wall inside the pelvis. It was a case of intussusception of the bowel appearing behind the anus.

Treatment.—The prolapsed mass was pushed back into the abdomen without much difficulty, and prevented returning by a purse-string suture in the anus. A worm draft was given the dog on the assumption that the source of irritation and straining might be intestinal worms. After three days the suture was removed from the anus, and the dog appeared to be going on all right for a fortnight afterwards, when it was decided to send him home as cured, but before one had time to do so the prolapse recurred to its full extent ; in fact, seemed more formidable, as the original invagination was invaginated on itself in the form of a ruff behind the anus.

Reduction was again effected, but on palpation afterwards through the abdominal wall it was ascertained that the invagination was not completely undone, as it could be felt as a large cylindrical mass in the middle of the abdomen. It was decided to perform ventro-fixation of the affected part of the bowel. This was done the next day.

Operation.—Laparotomy was performed on the middle line behind the umbilicus, and the ileum was found invaginated for a distance of six inches. By careful manipulation the invagination was reduced. Where the invagination commenced the bowel was quite hard, almost brittle, so that when it was squeezed between the finger and thumb it cracked on its peritoneal surface on the convex side.

The right lip of the parietal wound was everted by means of a swabbing forceps (with wide hollow jaws), and the mesentery of the bowel immediately in front of the point where the invagination began was sutured to this part of the abdominal wall by two fine kangaroo tendon sutures, inserted by means of a fine curved needle.

The patient recovered completely from the operation, and three months have elapsed since it was performed without the condition recurring.

The anterior part of the invagination was evidently never reduced when the prolapse was returned, thus accounting for the condition persistently recurring. It is remarkable that the animal never seemed to suffer any inconvenience from the intussusception, and retained his appetite all the time.

7.—Cat. Prolapse of Bowel with Invagination in a Kitten.

Subject.—A thin black kitten, affected with diarrhœa.

History.—The bowel had been prolapsed for forty-eight hours.

Symptoms.—A dark red prolapsed mass of bowel, protruding about five inches behind the anus, with a space between it and the rectal wall inside the pelvis, showing that the pelvic portion of the rectum was not involved.

Treatment.—Anæsthetised the patient with A.C.E. mixture and returned the prolapsed mass into the abdomen, but failed after prolonged manipulation through the abdominal wall, and the injection of warm water, to reduce the invagination. Consequently decided to operate at once.

Operation.—Performed laparotomy between the umbilicus and the pelvis, and found the bowel just in front of the latter invaginated for a distance of about 4 inches ; reduced the invagination, and sutured the mesentery to the abdominal wall with two fine kangaroo tendon sutures.

Result.—Although the diarrhœa persisted for several days after the operation the animal made a good recovery.

Remark.—Where the invagination commenced the bowel was hard and fibrous in consistency, as in the case of the dog (No. 6).

8.—Urethal Calculi in a Fox Terrier.

Subject.—A five year old wire-haired fox terrier in very obese condition.

History.—For some time the animal had shown difficulty in micturition, the urine coming away in drops.

Diagnosis.—Urethral calculus confirmed by passage of the catheter, which was arrested a short distance behind the os penis.

Operation.—Performed urethrotomy at the point where the catheter was arrested, and removed a calculus, but still the urine could not escape freely. Reintroduced the catheter and discovered another obstruction a couple of inches further back. Opened the urethra at the latter point and removed another calculus. The urethra was now clear throughout. Left the wounds completely open and ordered them to be dressed with a solution of soda bicarbonate and boric acid, an alkaline application to counteract acidity of the urine and thus diminish the risk of gangrene following infiltration of the tissues with urine.

Prognosis.—Guarded, fearing infiltration and gangrene owing to the obese condition of the patient.

Result.—The animal made an uninterrupted recovery, no complication supervening. One year and a-half afterwards the dog was in perfect health without any indication of stricture of the urethra.

THE RELATIVE PATHOGENICITY FOR CATTLE OF *TRYPANOSOMA CONGOLENSE* AND *T. VIVAX*.

By H. E. HORNBY, M.R.C.V.S.,
(*Northern Rhodesia*).

During 1920 I had the opportunity of studying a number of herds of native cattle on the Tanganyika Plateau which were affected with Trypanosomiasis. One large herd, in particular, under the supervision of Stock-Inspector J. Goddard, furnished me with much material for observation and experiment, and I am much indebted to this officer for his great assistance.

Examination of an affected herd would reveal animals ranging in condition from excellent fatness to emaciation. Interrogation would elicit the information that although many cattle had died, yet a number of those now in good condition had been sick and recovered. Many affected cows abort or throw weakly calves, but if such a beast is young, and grazing is good, she may pick up and rear her calf as well. A recovered animal may relapse and die.

We examined, microscopically, the blood and gland-juice of thirty cattle affected with, or said to have, recovered from the disease. In no instance did we find trypanosomes in a beast which showed no clinical symptoms of the disease, even though it were said to be a recovered animal.

Sixteen cows were found to harbour trypanosomes demonstrable by microscopical examination. Of these ten were infected by *T. congolense* and six by *T. vivax*.

Species of tryp.	Animals affected.	Gland only + ve.	Blood only + ve.	Blood and Glan + ve.
T. congolense	10	1	2	7
T. vivax ...	6	3	1	2

This tends to show that *T. vivax* infection may be overlooked if one resorts to blood examination only. The glands usually examined are the prescapular ones.

To determine from which infection spontaneous recovery under good conditions was likely to take place, we picked out four young cows affected with *T. congolense*, and four similarly harbouring *T. vivax*. They were left under the ordinary conditions of village management at a time of year when grazing was still plentiful.

Three months later all four *T. congolense* animals were dead. Of the *T. vivax* beasts one had died, one was very thin, but with blood and gland-juice active, and two appeared to have recovered.

To test the immunity of those two recovered animals, Mr. Goddard injected them subcutaneously with blood rich in *T. vivax*. Eight

days later both were decidedly ill and their blood was heavily infected.

Previously I had picked out a heifer which was said to have been ill and aborted a year ago, although at the time of experiemnt she was fat and fit, and injected her with two strains of *T. congolense.* I do not know with what species of trypanosome she had been infected previously, but she rapidly succumbed now, dying a month after inoculation.

I conclude, then, that in some districts a number of native cattle recover spontaneously from *T. vivax* infection, but that no great immunity results therefrom.

Correspondence.

To the Editor of THE VETERINARY JOURNAL.

SIR,—The annual report of the Civil Veterinary Department, Behar and Orissa, for the year 1919–1920, is indeed a matter of congratulation, and does credit to the Superintendent, Mr. D. Quinlan, M.R.C.V.S., whose energetic administration of the Department under his control has won for him the thanks of the Lieut.-Governor in Council.

The reorganisation of the Department was sanctioned by the Secretary of State for India, and an additional Imperial Officer, Mr. P. B. Riley, M.R.C.V.S., has joined and is under special training. It is hoped that this official will soon take over the duties of the North Behar Circle, which will relieve the Superintendent of a portion of his administrative duties, as these have for some time been too much for a single officer.

This is undoubtedly a step in the right direction ; but what seems most urgently required (now that the pay and prospects of the subordinate staff have been placed on a much better footing than ever before) is that the training at the Bengal Veterinary College should be improved by the appointment of additional European professors, to which successive Boards of Examiners have called attention ; for no progress can be made unless a more adequate teaching staff is provided. Such a staff costs money and this would necessarily be a debit against the District Boards of the Province, which no doubt have already too great a call on their inelastic resources. The question then arises, where can the money be got ? The answer is :—*By voluntary contributions.* Once the object is explained, believe me, the money would pour in. It would be privately collected by merchants and others, at a small sum of a few pies per maund of rice, etc., bagged ; and this would cover the additional expenditure required for the extra European staff at the Bengal Veterinary College, which annually turns out so many graduates, to whose care are entrusted the sick cattle in the Province.

Cattle, as is well known, are by Hindus held in great and superstitious reverence. Few people travelling in India can fail to notice the part played, whether in the flesh or its representation, by the cow

and the ox. Sacred cattle wander unmolested and unmolesting through the streets of the cities. Some *Naddis*, the bulls of *Siva*' keep guard before his temples, and round his tanks. They are carved on the walls of many a rock cavern, and the *Shastras* lay down most emphatically that cattle must be cared for by the people, and not be ill-treated ; or, to use the words of the Hindu Sacred Book, "*Ahimsa Parmo Dharmaha.*"

The District Boards would thus be saved a deal of extra expenditure, which the Government Resolution under review anticipates will come with the development of self-government, and there would be no doubt that the money would be forthcoming, as it is not an unusual way in India ot raking in charities.—Yours truly,

C. V. DALRYMPLE-HAY,

January 9, 1921. *Ag. Deputy Commissioner (Retired) Madras.*

A VETERINARY MASONIC LODGE.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—I ask you to find space in your next issue for this letter, asking for views and suggestions from those interested as to the advisability of starting a Masonic Lodge (Veterinary) in London. A very large number of our profession hold high positions in the Craft, and I have long felt that a lodge would supply a much-felt want for British Veterinary Freemasons. If it meets with approval, I would be happy to do my share in the matter and would like to hear from those who fall in with the suggestion, stating their lodge and rank in the Craft. Thanking you in anticipation. I am,

Yours very truly,

RICHARD SCOTT, *Capt., R.A.V.C. (temp.),*
P.P.G.J.W., Cumb. and Westd.

Station Veterinary Hospital,
Bordon, Hants.
December 26, 1920.

Personal.

THE period during which M. le Vétérinaire-inspecteur Fray (who has recently been retired on account of age) held the position of Chief Veterinary Officer in the French Army will always be a notable one in the history of the progress of the profession. Special attention is drawn to this in an article by the Editor of the *Revue Générale de Med. Vétérinaire,* the principal improvements being :—(1) The attachment of a veterinary officer to General Headquarters ; (2) the substitution of veterinary hospitals as separate units in contradistinction to the Depots de Chevaux Malades, which were formerly attached to, and under the control of the Remount Department ; and (3) the establishment of a research laboratory for the study of animal diseases controlled by officers in the Veterinary Service. Undoubtedly these

reforms, so long needed, were hastened forward by the late war, and the intimate contact and exchange of confidences which took place between the heads of the British and French Veterinary Services.

M. Victor Drouin, D.S.O., whose name will be remembered by many of his English colleagues during the time of the late war, when he held the rank of Major in the French Veterinary Service, and was attached to the Headquarters in Paris, has been appointed Inspector General of the Public Sanitary Service.

VETERINARY STUDENTS IN GERMANY AND AUSTRIA-HUNGARY.

IT is stated in the *Revue Générale* that the number of veterinary students in Germany enrolled in the summer session of 1920 is 1,571, these being distributed as follows:—Hanover 515, Munich 343, Berlin 308, Dresden 203, and Giessen 202. In Austria-Hungary there were 561, of whom Vienna had 471 and Buda-Pesth 90.

A CORRECTION.

BY a printer's error, the letter from Prof. Bradley, on Page 6 of the January issue, was addressed "*To the Editor of* THE VETERINARY JOURNAL." It should have been: "To the Editor of *The Medical Press and Circular*," and was abstracted in full as being likely to be of interest to our readers. It was a reply sent by Professor Bradley to a statement in the December 8 issue of that paper that the prospects of the veterinary profession were very gloomy at the present time.

NOTICES.

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